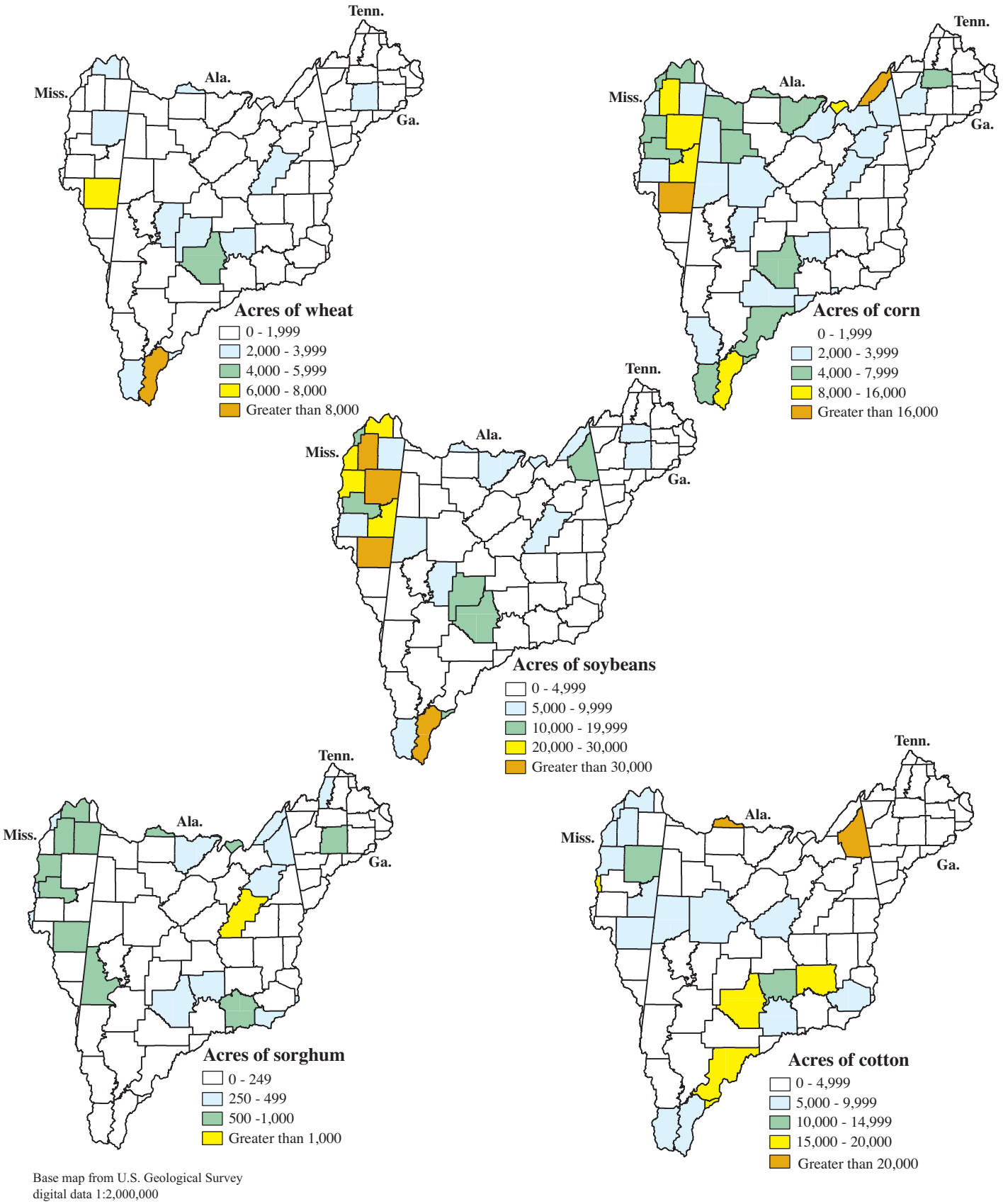


Figure 16. Agricultural crop production by county area in the Mobile River Basin for 1992. (Modified from U.S. Department of Agriculture, National Agricultural Statistics Service, 1997.)

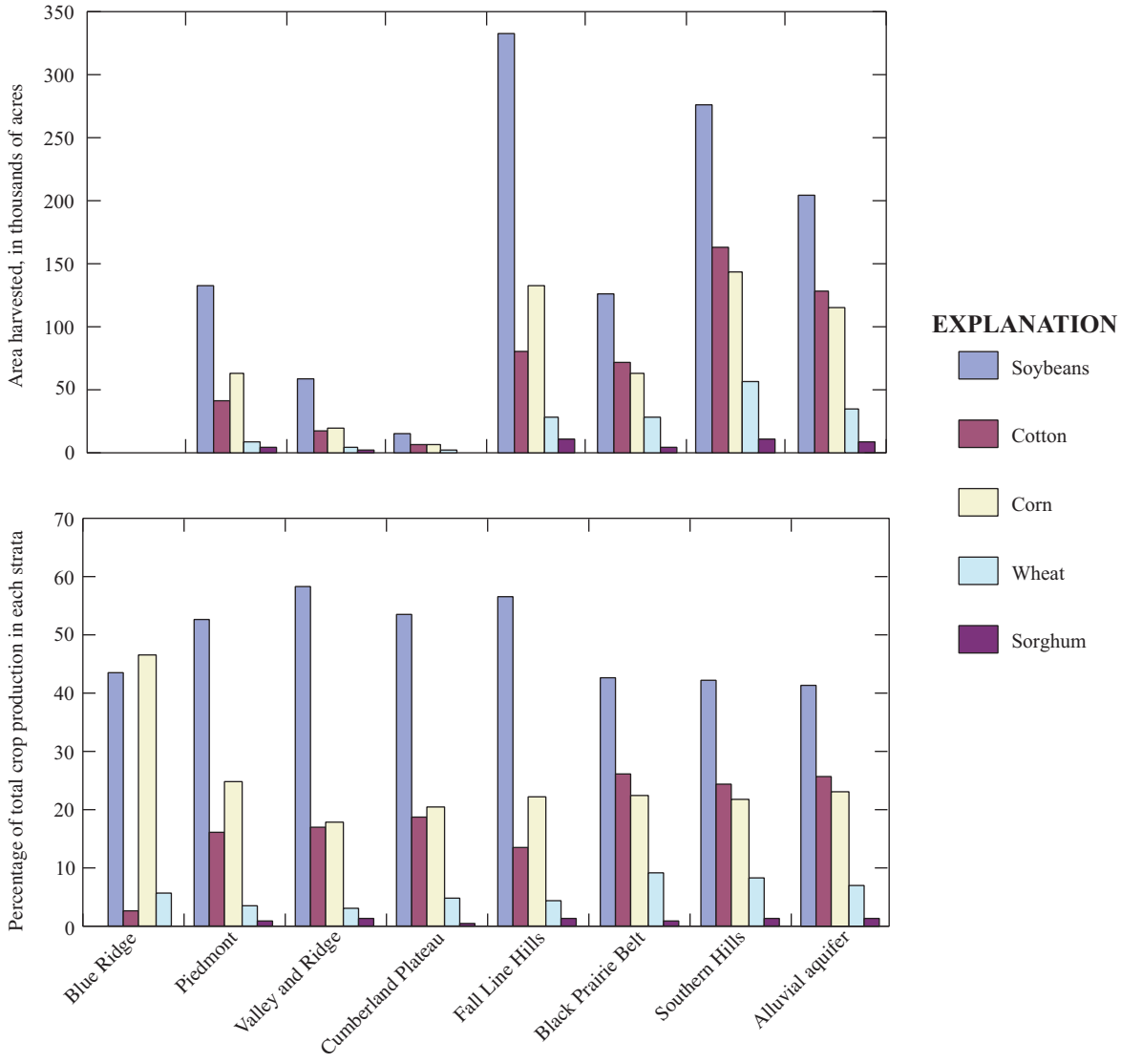


Figure 17. Agricultural crop production by strata for the Mobile River Basin in 1992.

around homes and in gardens, parks, and commercial areas are frequently detected in urban streams at levels of concern for aquatic life and may be a significant obstacle for restoring urban streams. Because chemical applications for urban use are not as stringently regulated as for agricultural purposes, the levels of pesticides found in streams in urban areas nationally generally is comparable to levels of pesticides found in streams in agricultural areas, with higher levels of herbicides in agricultural areas and higher levels of insecticides in urban areas (U.S. Geological Survey, 1999).

Mining

Coal mining, the predominant mineral extraction activity for the Mobile River Basin, is concentrated in the Cumberland Plateau and the Valley and Ridge Physiographic Provinces and some adjacent areas in the Fall Line Hills district in Alabama (fig. 21). Alabama ranks 15th in coal production among coal-producing states, yielding high-volatile A bituminous coal (U.S. Office of Surface Mining, 2000). Alabama has four coal fields that are part of the great Appalachian coal basin—Plateau, Warrior, Cahaba, and Coosa fields (fig. 21). Total coal reserves in Alabama are estimated at 4.8 billion tons; of that amount, an estimated 3.1 billion tons are recoverable reserves. Prior to 1986, surface mining was the predominate extraction method; but in 1999, about 75 percent of the coal was mined from underground. As of September 30, 2000, 27 permitted surface mines and 10 permitted underground mines were actively

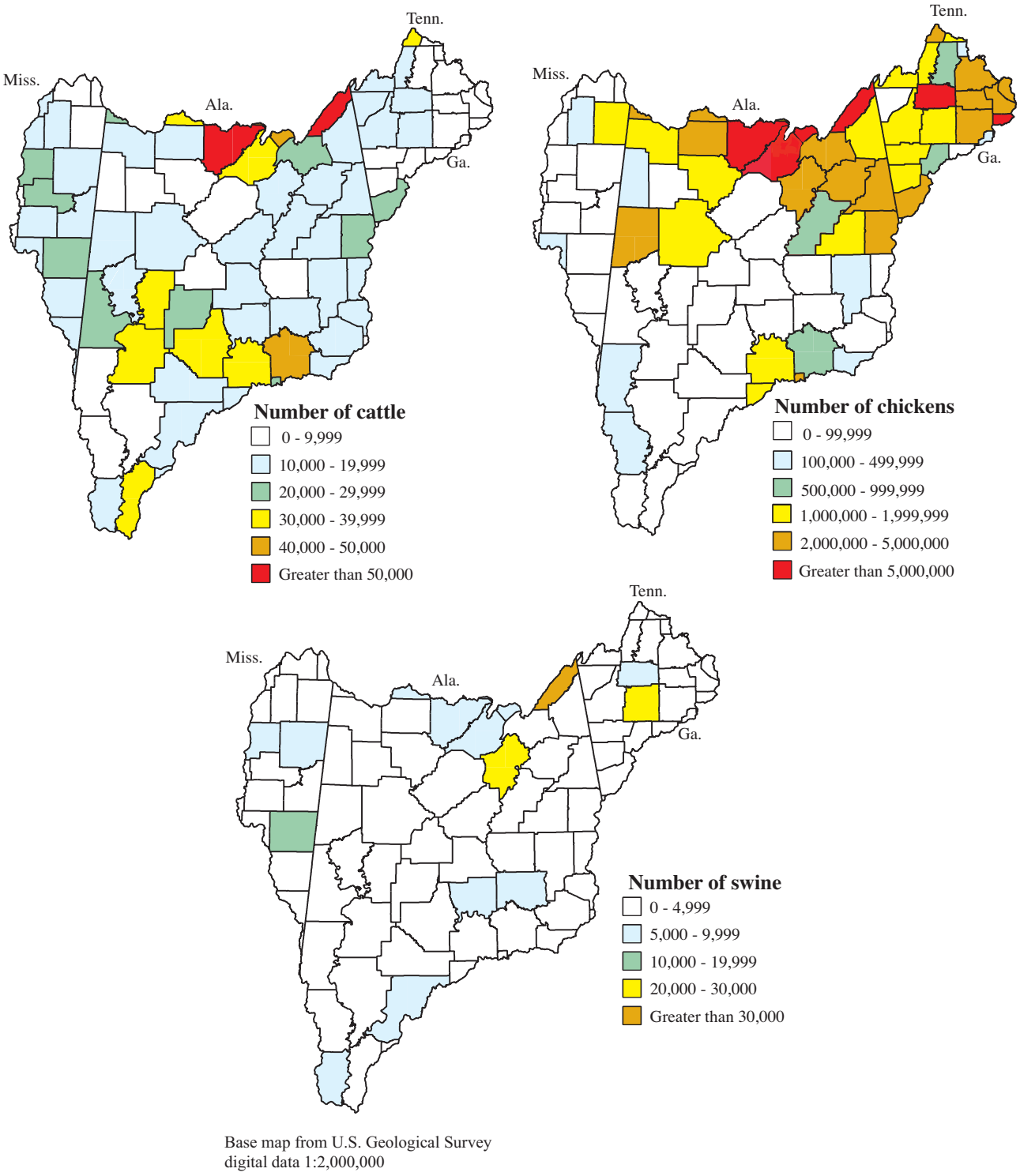


Figure 18. Livestock production by county in the Mobile River Basin for 1992. (Modified from U.S. Department of Agriculture, National Agricultural Statistics Service, 1997.)

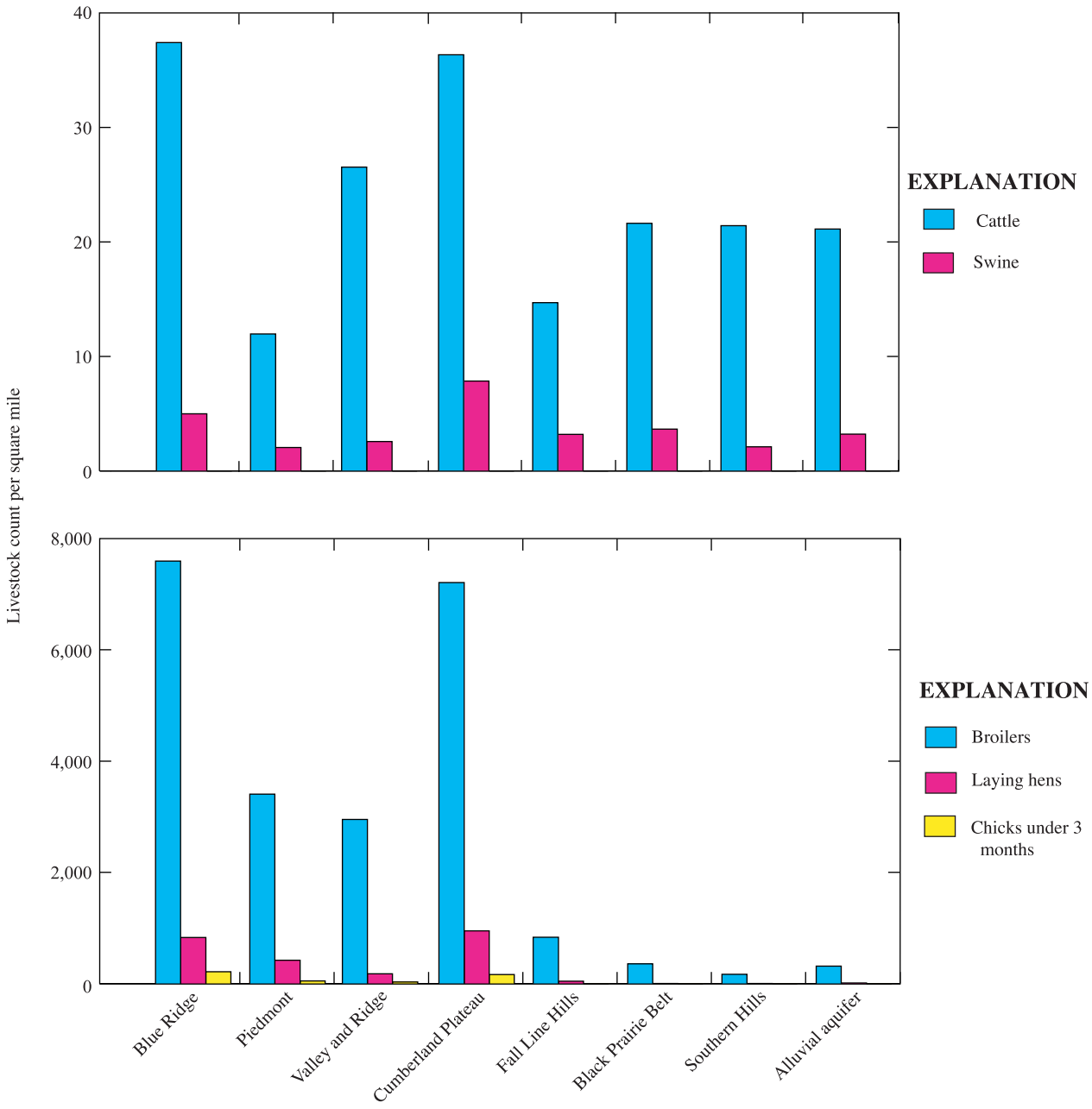
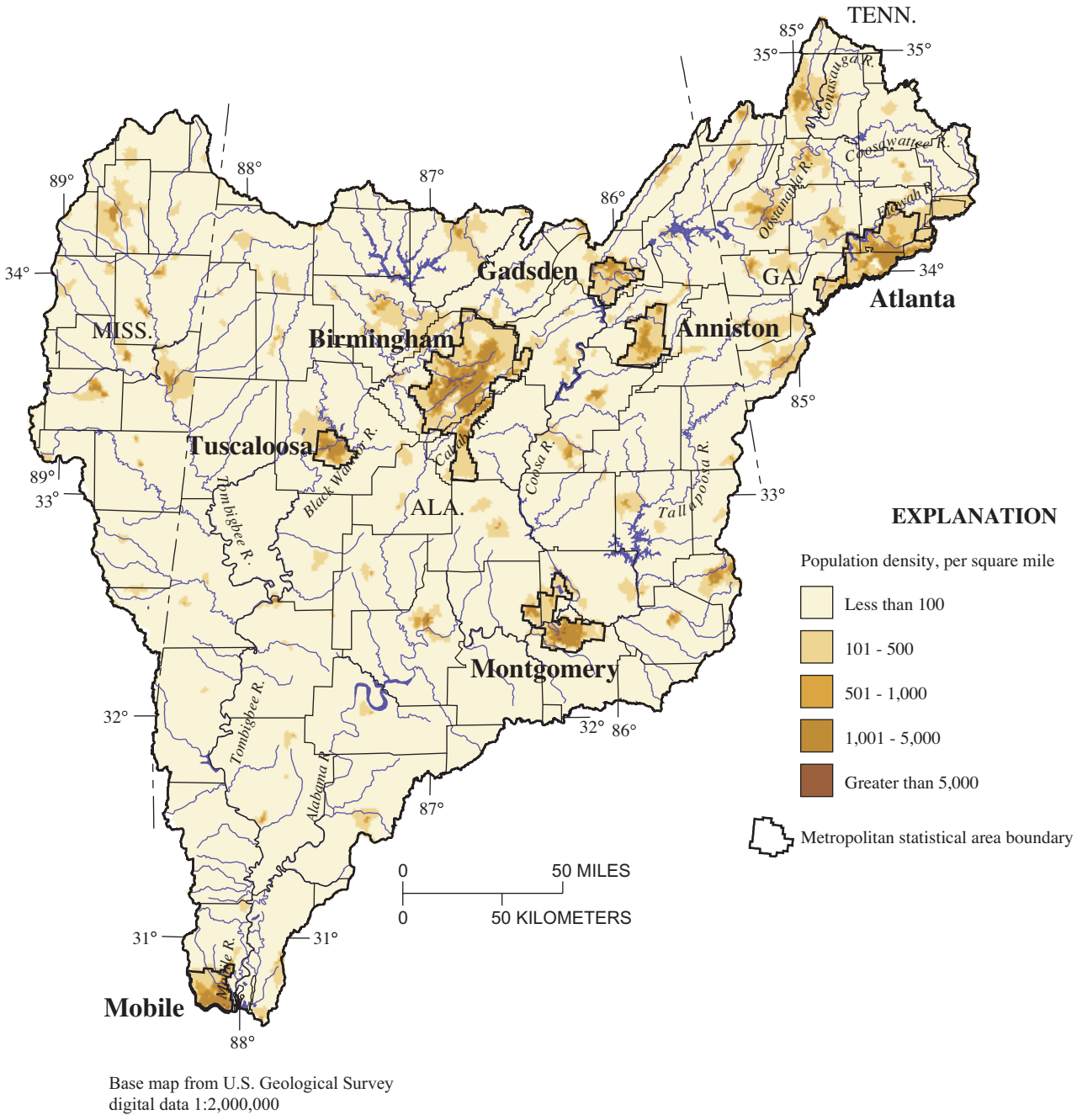


Figure 19. Livestock production by strata for the Mobile River Basin for 1992.



Base map from U.S. Geological Survey
digital data 1:2,000,000

Figure 20. The 1990 population density and metropolitan statistical areas in the Mobile River Basin. (Modified from Price and Clawges, 1999.)

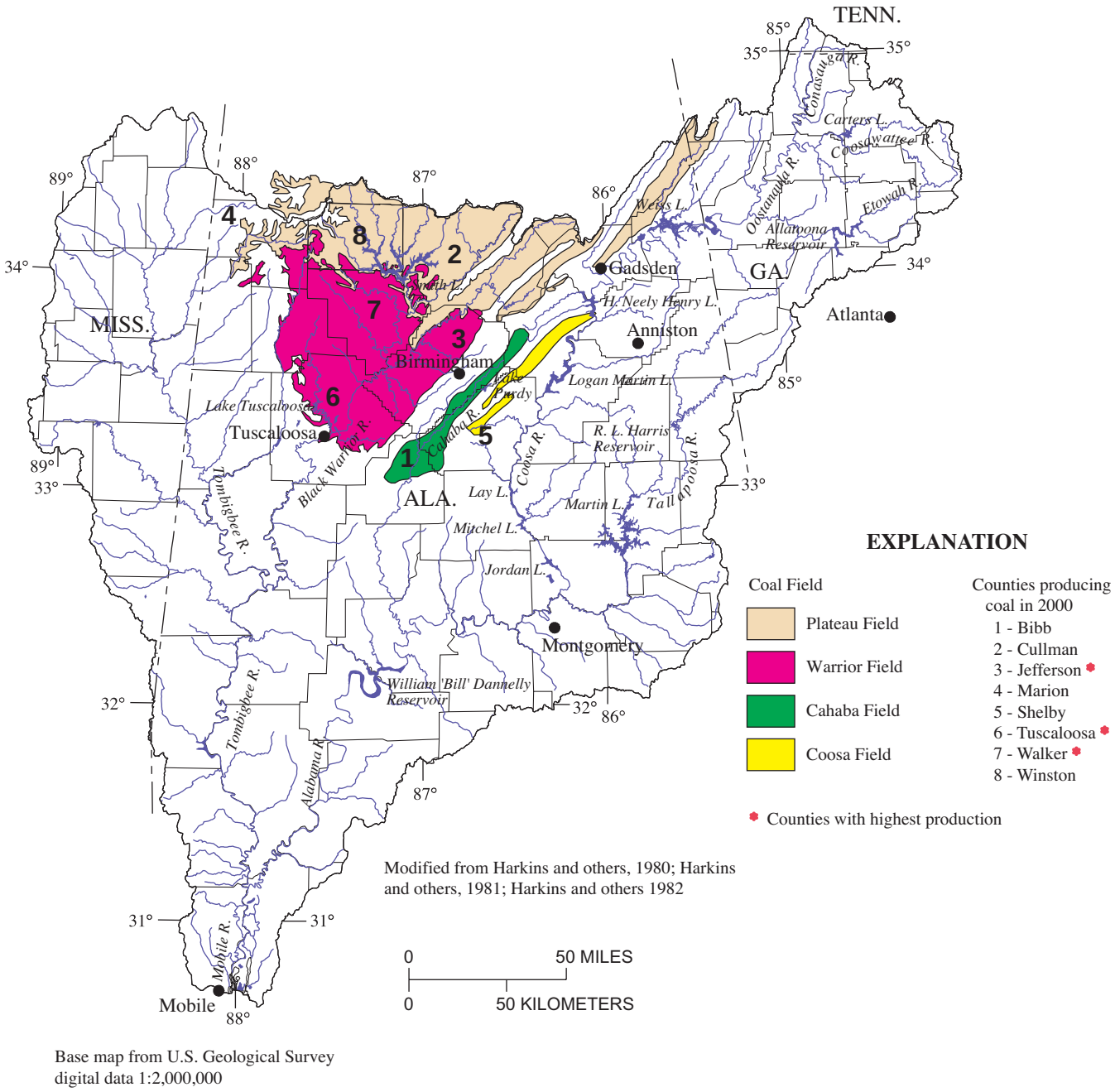


Figure 21. Coal fields of the great Appalachian coal basin located in the Mobile River Basin.

Table 4. Population in the Mobile River Basin by strata, 1970-90

[Data from the U.S. Bureau of the Census, 2001; mi^2, square miles; pop, population]

Strata	Population			Area (mi^2)	Density 1990 (pop/mi^2)	Population change	
	1970	1980	1990			1970-90	Percent
Deltaic deposits	38,900	45,900	50,000	508	98	11,100	29
Alluvial aquifer	140,800	156,300	159,000	3,123	51	18,200	13
Blue Ridge	14,700	18,800	23,800	542	44	9,100	62
Southern Hills district	361,700	402,500	411,700	9,156	45	50,000	14
Fall Line Hills district	296,300	344,800	353,700	7,497	47	57,400	19
Black Prairie Belt district	242,500	271,800	280,600	4,271	66	38,100	16
Cumberland Plateau	637,600	711,300	713,100	5,335	134	75,500	12
Valley and Ridge	836,100	963,000	1,024,900	6,820	150	188,800	23
Piedmont	411,200	515,600	656,300	6,427	102	245,100	60
Total for Mobile River Basin	2,979,800	3,430,000	3,673,100	43,679	84	693,300	23

producing coal in nine Alabama counties: Bibb, Cullman, Jackson (not in Mobile River Basin), Jefferson, Marion, Shelby, Tuscaloosa, Walker, and Winston. Approximately 85 percent of the coal comes from Jefferson, Tuscaloosa, and Walker Counties. In Alabama, approximately 103,300 acres have been identified as disturbed by surface coal mining and reclamation operations (U.S. Office of Surface Mining, 2000) (fig. 22). The abandoned strip mine areas are potential sources of acid mine drainage and sediment.

Water Use

The Mobile River Basin has abundant surface-water and ground-water resources. Water from streams and aquifers in the Mobile River Basin is used for municipal, industrial and rural water supplies, irrigation, and the generation of energy. Instream water uses include hydroelectric-power generation, wastewater assimilation, recreational boating, fish and wildlife habitat, and swimming.

Basinwide, surface-water use (excluding power generation) is about three and a third times greater than ground-water use (table 5) **(**Price and Clawges, 1999). The greatest surface-water use is for thermoelectric power generation where water is withdrawn for cooling and then discharged back into the water body. Consumptive water use for power generation in Alabama in 1995 was about 1 percent of the total water withdrawn for thermoelectric power generation (Price and Clawges, 1999). Water withdrawn for power generation is about an order of magnitude greater than that for any other water-use category and is greatest in the middle and southern parts of the Mobile River Basin (fig. 23). The next largest surface-water uses are industry and commercial use and public water supply. Most of the industrial and commercial usage is in the southern part of the study unit and near Gadsden, Ala., in the northern part of the study unit (fig. 23). Most (72 percent) of the public drinking-water supply in the basin is withdrawn from surface-water resources, and the spatial distribution generally corresponds to population densities. Mining and agricultural water use also correspond to those land-use activities.

Table 5. Estimated water use in the Mobile River Basin, 1995

[Mgal/d, million gallons per day; data from Price and Clawges, 1999]

Category	Total withdrawal (Mgal/d)	
	Surface water	Ground water
Public water supply	518	200
Domestic water supply	0	50.3
Power generation	3,035	2.6
Industrial and commercial	457.6	47.1
Mining	7.4	4.1
Livestock	94.3	16.4
Irrigation	40.6	15.0
Total	4,152.9	335.5

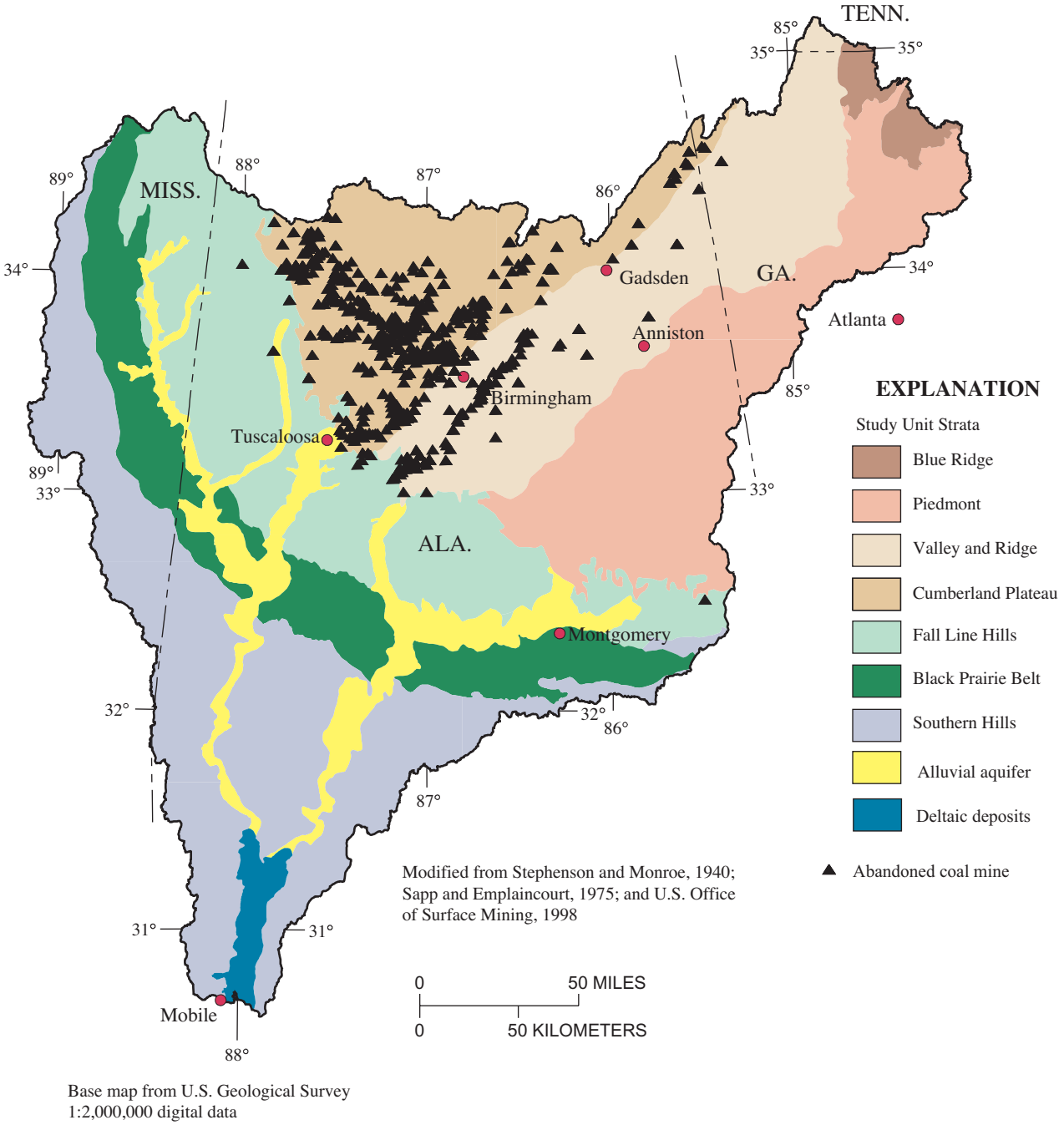


Figure 22. Location of abandoned coal surface mines in the Mobile River Basin.